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09/748,757	12/22/2000	Stephen S. Jackson	2204/A81	4527

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EXAMINER
KLINGER, SCOTT M

ART UNIT	PAPER NUMBER
2153	

DATE MAILED: 11/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/748,757	JACKSON ET AL.	
	Examiner	Art Unit	
	Scott M. Klinger	2153	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 August 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,7-9,11-16,18-20 and 22-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-9,11-16,18-20 and 22-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-5, 7-9, 11-16, 18-20, and 22-28 are pending.

Claims 6, 10, 17, and 21 have been cancelled.

Response to Arguments

Applicant's arguments, filed 10 August 2004, with respect to the rejection of claims 1, 8, and 12 under 35 USC § 103 have been fully considered and are persuasive. It is noted that the limitations in the claims that are not shown by Ishida in view of McCormack (or Saito in view of McCormack), were originally in claims 6, 10, and 21. Therefore, the rejections have been withdrawn. However, upon further consideration, a new ground(s) of rejection is made.

The system of Ishida in view of McCormack shows that the power over Ethernet network provides a 48 V potential to devices that are designed for power over Ethernet: *"First and second Ethernet transmission lines 20 and 22 are provided which carry a signal including a 60 Hz ISO 48 V potential component and a series superimposed communication pulse (e.g. +/-2 V) component. Similarly, first and second Ethernet receiving lines 24 and 26 are provided which carry a signal including a 60 Hz ISO 48 V potential component and a series superimposed communication pulse (e.g. +/-2 V) component."* (McCormack, col. 8, lines 18-26). It is well known in the art to convert a first voltage to a second voltage depending on what the receiving device needs to operate. Typically computer power supplies convert a 120V AC signal into a 12 V DC signal to power hard drives. See rejections below

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5, 7-9, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida (U.S. Patent Number 6,574,704, hereinafter "Ishida") in view of McCormack et al. (U.S. Patent Number 6,535,983, hereinafter "McCormack") and in further view of ATX (ATX Version 2.01, February 1997).

In referring to claim 1, Ishida discloses information storage management device and method, control device and method. Ishida shows substantial features of the claimed invention, including:

- A memory configured to store data; a control module coupled to the memory, the control module for controlling the transmission of data from the memory to the network and the storage of data received from the network in the memory:
  "In this case, the hierarchical storage management unit 2 is comprised of a local area network (LAN) controller 10, a redundant array of inexpensive disks (RAID)--hard disk drive (HDD) controller 11, a small computer system interface (SCSI) controller 12 and a chip set 13 which are mutually connected via a peripheral component interconnect (PCI) bus 14, as well as a central processing unit (CPU) 15 and a main memory 16 which are connected to the chip set 13." (Ishida, col. 2, lines 52-60)

However, Ishida does not show the network is a power integrated network and a power module coupled to the memory and the control module, the power module receiving power from the power integrated network to energize the data storage device. Nonetheless this feature is well known in the art and would have been an obvious modification to the system disclosed by Ishida as evidenced by McCormack.

In analogous art, McCormack discloses a system and method for signaling and detecting requests for power over Ethernet. McCormack shows:

- A power integrated network:
  "It is another object of the invention to provide a system which can be used with existing end devices which allows power and a data signal to be provided over the Ethernet twisted pair connection and also allows existing equipment to be used in this system, without problems resulting." (McCormack, col. 3, lines 26-30)

- A power module to provide power to the memory of the device:
  McCormack, Figure 1 shows a system powered end device 12, which inherently implies a power module to receive power from the network and provide it to said device.

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the network of Ishida so as to provide power over the network, and a power module coupled to the memory and the control module, such as taught by McCormack, in order to reduce "the wiring requirements to transmit data and power to a wireless access point without having to use additional wire pairs." (McCormack, col. 2, lines 23-25)

Although Ishida in view of McCormack shows substantial features of the claimed invention, Ishida in view of McCormack does not explicitly show the power module includes a power converter for converting the power received from the power integrated network from a first voltage level to a second voltage level. Nonetheless this feature is well known in the art and would have been an obvious modification to the system disclosed by Ishida in view of McCormack as evidenced by ATX.

In analogous art, ATX discloses a form factor specification for a computer motherboard. ATX shows a system which requires multiple voltage supply levels: ATX, page 24, table 7 shows the voltage levels needed to power an ATX motherboard.

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of implementing the system of Ishida in view of McCormack so as to convert the received voltage level to a second voltage level, such as taught by ATX, in order to use a standard motherboard to control the storage device.

In referring to claim 2, Ishida in view of McCormack and in further view of ATX shows,

- A network interface coupled to the control module, the network interface configured to communicate with the power integrated network:
  "In this case, the hierarchical storage management unit 2 is comprised of a local area network (LAN) controller 10 ..." (Ishida, col. 2, lines 52-60, full quote above)

In referring to claim 3, Ishida in view of McCormack and in further view of ATX shows,

- The control module packages data for transmission over the network:
  "In this case, the hierarchical storage management unit 2 is comprised of a local area network (LAN) controller 10 ..." (Ishida, col. 2, lines 52-60, full quote above), A LAN controller inherently implies that the data would be packaged for transmission of the network

In referring to claims 4, Ishida in view of McCormack and in further view of ATX shows,

- The power integrated network is a Power Ethernet network:
  "It is another object of the invention to provide a system which can be used with existing end devices which allows power ... to be provided over the Ethernet twisted pair connection ..." (McCormack, col. 3, lines 26-30, full quote above)

In referring to claim 5, Ishida in view of McCormack and in further view of ATX shows,

- The memory is a device including a SCSI interface:
  "... a small computer system interface (SCSI) controller 12 and a chip set 13 which are mutually connected via a peripheral component interconnect (PCI) bus 14, as well as a central processing unit (CPU) 15 and a main memory 16 which are connected to the chip set 13." (Ishida, col. 2, lines 52-60, full quote above)

In referring to claim 7, Ishida in view of McCormack and in further view of ATX shows,

- The second voltage level is lower than the first voltage level:
  McCormack, Figure 5B shows that during the operating phase, a voltage of +14/-14 is applied across the Ethernet cable, Figure 7B shows the network side of the operating phase, it is shown that the first voltage is converted to a second voltage of 5 volts

In referring to claim 8, Ishida discloses information storage management device and method, control device and method. Ishida shows substantial features of the claimed invention, including:

- Coupling a data storage device to the power integrated network, the data storage device configured to communicate with a network; receiving data at the data storage device from the network:

  "In this case, the hierarchical storage management unit 2 is comprised of a local area network (LAN) controller 10, a redundant array of inexpensive disks (RAID)--hard disk drive (HDD) controller 11, a small computer system interface (SCSI) controller 12 and a chip set 13 which are mutually connected via a peripheral component interconnect (PCI) bus 14, as well as a central processing unit (CPU) 15 and a main memory 16 which are connected to the chip set 13." (Ishida, col. 2, lines 52-60)

However, Ishida does not show the network is a power integrated network and a power module coupled to the memory and the control module, the power module receiving power from the power integrated network to energize the data storage device. Nonetheless this feature is well known in the art and would have been an obvious modification to the system disclosed by Ishida as evidenced by McCormack.

In analogous art, McCormack discloses a system and method for signaling and detecting requests for power over Ethernet. McCormack shows:

- A power integrated network:

  "It is another object of the invention to provide a system which can be used with existing end devices which allows power and a data signal to be provided over the Ethernet twisted pair connection and also allows existing equipment to be used in this system, without problems resulting." (McCormack, col. 3, lines 26-30)

- A power module to provide power to the memory of the device:

  McCormack, Figure 1 shows a system powered end device 12, which inherently implies a power module to receive power from the network and provide it to said device.

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the network of Ishida so as to provide power over the

network, and a power module coupled to the memory and the control module, such as taught by McCormack, in order to reduce "the wiring requirements to transmit data and power to a wireless access point without having to use additional wire pairs." (McCormack, col. 2, lines 23-25)

Although Ishida in view of McCormack shows substantial features of the claimed invention, Ishida in view of McCormack does not explicitly show the power module includes a power converter for converting the power received from the power integrated network from a first voltage level to a second voltage level. Nonetheless this feature is well known in the art and would have been an obvious modification to the system disclosed by Ishida in view of McCormack as evidenced by ATX.

In analogous art, ATX discloses a form factor specification for a computer motherboard. ATX shows a system which requires multiple voltage supply levels: ATX, page 24, table 7 shows the voltage levels needed to power an ATX motherboard.

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of implementing the system of Ishida in view of McCormack so as to convert the received voltage level to a second voltage level, such as taught by ATX, in order to use a standard motherboard to control the storage device.

In referring to claim 9, Ishida in view of McCormack and in further view of ATX shows,

- The power integrated network is a Power Ethernet network:
  "It is another object of the invention to provide a system which can be used with existing end devices which allows power ... to be provided over the Ethernet twisted pair connection ..." (McCormack, col. 3, lines 26-30, full quote above)

In referring to claim 11, Ishida in view of McCormack and in further view of ATX shows,

- The second voltage level is lower than the first voltage level:
  McCormack, Figure 5B shows that during the operating phase, a voltage of +14/-14 is applied across the Ethernet cable, Figure 7B shows the network side of the operating phase, it is shown that the first voltage is converted to a second voltage of 5 volts

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Claims 12, 14-16, 18, 19, and 22-25, 27, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito et al. (U.S. Patent Number 6,523,696, hereinafter "Saito") in view of McCormack and in further view of ATX.

In referring to claim 12, Saito discloses a communication control device for realizing uniform service providing environment. Saito shows substantial features of the claimed invention, including a first network that provides data; a specified network coupled to the first network so that data may be transmitted from and received by the first network across the specified network; a second network that provides data coupled to the specified network so that data may be transmitted from and received by the second network across the specified network; a first data storage device coupled to the first network, the first data storage device configured to communicate with the first network; a second data storage device coupled to the second network, the second data storage device configured to communicate with the second network: Saito, Figure 7, shows a first network (with a storage device 206) connected to a specified network 202, and a second network with a storage device 210

However, Saito does not show the first and second networks are power integrated networks and power modules coupled to the memory of the devices and the control modules, the power modules receiving power from the power integrated networks to energize the data storage devices. Nonetheless this feature is well known in the art and would have been an obvious modification to the system disclosed by Saito as evidenced by McCormack.

In analogous art, McCormack discloses a system and method for signaling and detecting requests for power over Ethernet. McCormack shows the first and second networks are power integrated network: *"It is another object of the invention to provide a system which can be used with existing end devices which allows power and a data signal to be provided over the Ethernet twisted pair connection and also allows existing equipment to be used in this system, without problems resulting."* (McCormack, col. 3, lines 26-30)

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the network of Saito so as to provide power over the first and second networks, as taught by McCormack, in order to reduce "the wiring requirements

to transmit data and power to a wireless access point without having to use additional wire pairs." (McCormack, col. 2, lines 23-25)

Although Saito in view of McCormack shows substantial features of the claimed invention, Saito in view of McCormack does not explicitly show a power module which includes a power converter for converting the power received from the first power integrated network from a first voltage level to a second voltage level. Nonetheless this feature is well known in the art and would have been an obvious modification to the system disclosed by Saito in view of McCormack as evidenced by ATX.

In analogous art, ATX discloses a form factor specification for a computer motherboard. ATX shows a system which requires multiple voltage supply levels: ATX, page 24, table 7 shows the voltage levels needed to power an ATX motherboard.

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of implementing the system of Saito in view of McCormack so as to convert the received voltage level to a second voltage level, such as taught by ATX, in order to use a standard motherboard to control the storage device.

In referring to claim 14, Saito in view of McCormack and in further view of ATX shows,

- The first power integrated network is a Power Ethernet network
  "It is another object of the invention to provide a system which can be used with existing end devices which allows power ... to be provided over the Ethernet twisted pair connection ..." (McCormack, col. 3, lines 26-30, full quote above)

In referring to claim 15, Saito in view of McCormack and in further view of ATX shows,

- The second power integrated network is a Power Ethernet network
  "It is another object of the invention to provide a system which can be used with existing end devices which allows power ... to be provided over the Ethernet twisted pair connection ..." (McCormack, col. 3, lines 26-30, full quote above)

In referring to claim 16, Saito in view of McCormack and in further view of ATX shows,

- The specified network is the Internet:
  "FIG. 7 shows a system configuration according to this second embodiment, in which two home networks are interconnected through a public network 202. The public network 202 can be a telephone network, a broadband network such as ISDN, a dedicated connection, or Internet, although preferably a network that can satisfy a communication bandwidth necessary for utilizing and providing services should be used." (Saito, col. 18, lines 49-55)

In referring to claim 18, Saito in view of McCormack and in further view of ATX shows,

- The first data storage device further includes a network interface coupled to the control module, the network interface configured to communicate with the first network:
  "The first home network comprises a first IEEE 1394 bus 201, to which a first AV connection device 204, a personal computer (PC) 206, and a digital TV 207 are connected." (Saito, col. 18, lines 57-59)

In referring to claim 19, Saito in view of McCormack and in further view of ATX shows,

- The control module packages data for transmission over the first network
  "The first home network comprises a first IEEE 1394 bus 201, to which a first AV connection device 204, a personal computer (PC) 206, and a digital TV 207 are connected." (Saito, col. 18, lines 57-59)
  A personal computer connected to a network inherently implies a control module to package data for transmission over said network

In referring to claim 21, Saito in view of McCormack and in further view of ATX shows,

- The power module includes a power converter for converting power received from the first power integrated network from a first voltage level to a second voltage level

"The hub includes a transformer 40, associated with each port, which isolates the transmitter and related circuitry 16 from the Ethernet twisted pair wiring 14. The transformer 40 is connected to the lines 20 and 22 ..." (McCormack, col. 7, lines 27-37, full quote above)

A transformer converts a first voltage level to a second voltage level

In referring to claim 22, Saito in view of McCormack and in further view of ATX shows,

- The second voltage level is lower than the first voltage level:
  McCormack, Figure 5B shows that during the operating phase, a voltage of +14/-14 is applied across the Ethernet cable, Figure 7B shows the network side of the operating phase, it is shown that the first voltage is converted to a second voltage of 5 volts

In referring to claim 23, Saito in view of McCormack and in further view of ATX shows,

- A memory configured to store the data; a control module coupled to the memory, the control module for controlling the transmission of data from the memory to the second network and the storage of data received from the second network in the memory:
  "To the second IEEE 1394 bus 203 of the second home network, a second AV connection device 205, a DVD player 208, a digital VTR 209, a PC 210, and a printer 211 are connected, where the PC 210 is also connected to the home automation network 212. Apart from the PC 210, an air conditioner 213 and a microwave oven 214 are also connected to the home automation network 212." (Saito, col. 18, line 66 – col. 19, line 5)
  A personal computer connected to a network inherently implies memory, and a control module to control data transmission over said network
- A power module coupled to the memory area and the control module, the power module receiving power from the second power integrated network:
  A power module is inherently implied in a Power-over-Ethernet system

In referring to claim 24, Saito in view of McCormack and in further view of ATX shows,

- The second data storage device further includes a network interface coupled to the control module, the network interface configured to communicate with the second network:

  "To the second IEEE 1394 bus 203 of the second home network ... a PC 210, and a printer 211 are connected, where the PC 210 is also connected to the home automation network 212 ..." (Saito, col. 18, line 66 – col. 19, line 5, full quote above)

In referring to claim 25, Saito in view of McCormack and in further view of ATX shows,

- The control module packages data for transmission over the second network:

  "To the second IEEE 1394 bus 203 of the second home network ... a PC 210, and a printer 211 are connected, where the PC 210 is also connected to the home automation network 212 ..." (Saito, col. 18, line 66 – col. 19, line 5, full quote above)

  A personal computer connected to a network inherently implies a control module to package data for transmission over said network

In referring to claim 27, Saito in view of McCormack and in further view of ATX shows,

- The power module includes a power converter for converting power received from the power integrated network from a first voltage level to a second voltage level:

  ATX discloses a form factor specification for a computer motherboard. ATX shows a system which requires multiple voltage supply levels: ATX, page 24, table 7 shows the voltage levels needed to power an ATX motherboard.

In referring to claim 28, Saito in view of McCormack and in further view of ATX shows,

- The second voltage level is lower than the first voltage level:

  McCormack, Figure 5B shows that during the operating phase, a voltage of +14/-14 is applied across the Ethernet cable, Figure 7B shows the network side of the operating phase, it is shown that the first voltage is converted to a second voltage of 5 volts

Claims 13, 20, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito in view of McCormack in further view of ATX and in further view of Ishida. Although Saito in view of McCormack in further view of ATX shows substantial features of the claimed invention, including the system of claims 12, 17, and 23, shown above, Saito in view of McCormack in further view of ATX does not show a SCSI interface or that the storage devices are in a RAID configuration. Nonetheless these features are well known in the art and would have been an obvious implementation of the system disclosed by Saito in view of McCormack in further view of ATX as evidenced by Ishida.

In analogous art, Ishida discloses an information storage management device and method, control device and method. Ishida shows:

- In referring to claim 13, the first storage device and the second storage device are in a RAID configuration:

  "In this case, the hierarchical storage management unit 2 is comprised of a local area network (LAN) controller 10, a redundant array of inexpensive disks (RAID)--hard disk drive (HDD) controller 11, a small computer system interface (SCSI) controller 12 and a chip set 13 which are mutually connected via a peripheral component interconnect (PCI) bus 14, as well as a central processing unit (CPU) 15 and a main memory 16 which are connected to the chip set 13." (Ishida, col. 2, lines 52-60)
- In referring to claims 20 and 26, the memory area is a device including a SCSI interface:

  "... a small computer system interface (SCSI) controller 12 and a chip set 13 which are mutually connected via a peripheral component interconnect (PCI) bus 14, as well as a central processing unit (CPU) 15 and a main memory 16 which are connected to the chip set 13." (Ishida, col. 2, lines 52-60, full quote above)

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of implementing the system of Saito in view of McCormack in further view of ATX so as to uses SCSI interfaces and a RAID configuration, such as taught by Ishida, in order to provide a high aggregate transfer rate, and error correction.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott M. Klinger whose telephone number is (703) 305-8285. The examiner can normally be reached on M-F 7:00am - 3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Burgess can be reached on (703) 305-4792. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Scott M. Klinger
Examiner
Art Unit 2153

smk

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